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## Ab-initio Study of Elastic Properties of Ru-Cr and Pt-Cr Alloys

*Thursday, 12 July 2012 17:30 (2 hours)*

### Abstract content <br> &nbsp; (Max 300 words)

With the use of density functional theory, First principles planewave pseudopotential methods has been used to investigate the elastic properties of Pt-Cr and Ru-Cr binary alloys. The elastic constants, bulk modulus, shear modulus and Young's modulus were calculated for the different phases of the composition of A<sub>3</sub>B and AB<sub>3</sub> (where A = Pt or Ru and B = Cr). The results provide useful information on elastic properties of PtCr binary alloys with promising application as coatings to cover the turbine engines which are exposed to aggressive environments.

### Apply to be<br> consider for a student <br> &nbsp; award (Yes / No)?

no

### Level for award<br>&nbsp;(Hons, MSc, <br> &nbsp; PhD)?

none

### Would you like to <br> submit a short paper <br> for the Conference <br> Pro-ceedings (Yes / No)?

no

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**Session Classification:** Poster Session

**Track Classification:** Track A - Division for Condensed Matter Physics and Materials